



NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY

c/o Museum of Ontario Archaeology
1600 Attawandaron Road, London, ON N6G 3M6



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09-4 & 09-5

The next speaker night will be January 14th. The speaker will be **Linda Howie** talking about some of her Mayan Research. February 11th will be **Members' Night**. Neal may need some more members to talk at the Members' Night meeting, so please check our web site for future announcements.



Speaker's Night is held the 2nd Thursday of each month (January to April and September to December) at the Museum of Ontario Archaeology, 1600 Attawandaron Road, near the corner of Wonderland & Fanshawe Park Road, in the northwest part of the city. The meeting starts at 8:00 pm.

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SALVAGE ARCHAEOLOGY IN LONDON: THE C.O.E.D. PROJECT

PART 3(A): THE MULTI-COMPONENT POND MILLS SITE

Dana Poulton

INTRODUCTION

The Pond Mills site was initially discovered and tested in 1927. It was rediscovered in 1979 and subjected to limited testing and surface collection in that and the subsequent year. The resulting collections indicated a pure Late Woodland component pertaining to the late Middleport substage, ca. 1400 A.D. The C.O.E.D. project conducted more intensive test excavations in 1983, focusing primarily on two middens. These investigations demonstrate that the Pond Mills site is multi-component and, with the exception of professional and illicit excavations, undisturbed. It is located in a woodlot in southeast London near two kettle lakes.

The C.O.E.D. project confirmed a late Middleport placement for the main component of the site. This component covers a minimum area of one acre and comprises four known middens. The richness of the middens suggests a lengthy or repeated occupation, possibly as a special function site. One pottery sample from this component has yielded a corrected thermoluminescent date of 1525 ± 90 A.D. Assuming an actual date of ca. 1300-1400 A.D., the Pond Mills Middleport occupation appears to be somewhat earlier than other (15th century) Iroquoian sites recognized for this part of London.

The area of the Middleport component produced evidence of earlier occupations as well. The best defined of these to date is a Middle Woodland Saugeen camp, stratigraphically sealed by one of the Late Woodland middens. One sherd from the Saugeen component has yielded a corrected thermoluminescence date of 830 A.D. ± 230. Other ceramics suggest brief occupations of the site by late Middle Woodland peoples in the period ca. 600-900 A.D.

BACKGROUND

The Pond Mills site was first discovered and tested in 1927 by Dr. Wilfrid Jury, later the founder of the Museum of Indian Archaeology. Like so many sites recorded by the early archaeological pioneers, however, the location of the site was lost to the professional archaeological community for over 50 years, until 1979. It was in this year that the Museum of Indian Archaeology (M.I.A.) undertook a study of Middlesex County sites represented in the Jury collection. Although no records or field notes describing Jury's excavation appear to have survived, the original catalogue entries for 1927 contain several references to artifacts designated "B4" from the "camp site near Pond Mills." In one case Jury refers to it as "the village site." The extant collection, analysed by Pearce et al. (1980), contained 11 rim sherds and 19 end scrapers in addition to a small quantity of other prehistoric material. This study concluded that Pond Mills was a Middleport component. Significantly, the analysts also noted "seven of the end scrapers are of the corner-notched variety, typical of those found on Late Archaic and Early Woodland sites. However, this type of scraper appears in small frequency on later sites, including the Lawson prehistoric Neutral village" (Ibid: 34). It was further observed that the total sample of 19 end scrapers included examples of Flint Ridge chalcedony as well as Onondaga, Bayport, Selkirk and possibly Hudson Bay Lowland cherts.

By coincidence it was also in 1979 that the site itself was rediscovered by Jim Keron, then President of the London Chapter of the Ontario Archaeological Society, in the course of a survey attempting to locate similarly "lost" sites mentioned by W.J. Wintemberg (1939). Mr. Keron was led to the site by Mr. Bert Baty, the grandson of the owner in Jury's time. Mr. Baty informed Keron that Jury had dug an area approximately 20 by 30 feet in extent in an "ash pit" herein designated Midden 303 (Figure 1), and had uncovered the outline of a wall. Keron made a total of four visits to the site in 1979, surface collecting that midden and another which he discovered, herein designated Midden 301. He returned in 1980 and excavated a 50 cm square test pit in the latter. His

investigations, summarized in his 1979 licence report (Keron 1981), also extended to other potential areas of the site: including fire-cracked rock and flakes observed in an area some 30 meters northeast of Midden 303, a projectile point found further east on the bank of a stream, and debitage found in the northeast corner of the ploughed field west of the site. On the basis of his analysis Keron also determined the site to be Middleport, with correspondences to both the Pound and Moyer sites (Keron 1981 and survey notes). He subsequently donated his Pond Mills material to the M.I.A.

The above collections comprise a relatively small sample of diagnostic ceramics including 11 rims pertaining to discrete vessels recovered by Jury, attributed to Midden 303, and 10 rims pertaining to three vessels recovered by Keron from Midden 301. Nevertheless, the analyses and on-site investigations demonstrated the importance of the Middleport component as the only undisturbed site of this age known in the city. The need for additional testing was obvious in view of the fact that the property was zoned industrial and that the site would presumably be destroyed at some future date if action were not taken. This need was underlined in 1981 when it was learned that two teenage boys had spent much of that summer extensively pot-hunting Midden 303. All of these factors recommended the inclusion of the Pond Mills site in the C.O.E.D. project.

LOCATION AND DESCRIPTION

The Pond Mills site (Figure 1) is located at an elevation of 890 feet a.s.l. in Lot 18, Concession 2, Westminster Township, Middlesex County, in what is now the southeast part of the City of London. The site is situated in a secondary growth woodlot near a pond that has been identified a kettle lake (McAndrews 1981).

The neighbourhood of Pond Mills lies within the western fringe of an area of Guelph Loam soils (Ontario Soil Survey, 1931). Guelph Loam interfaces with an extensive area of Huron Clay Loam a few hundred meters west of the site, and with Perth Clay Loam and London Loam soils just over one kilometre to the southwest (Ibid). In

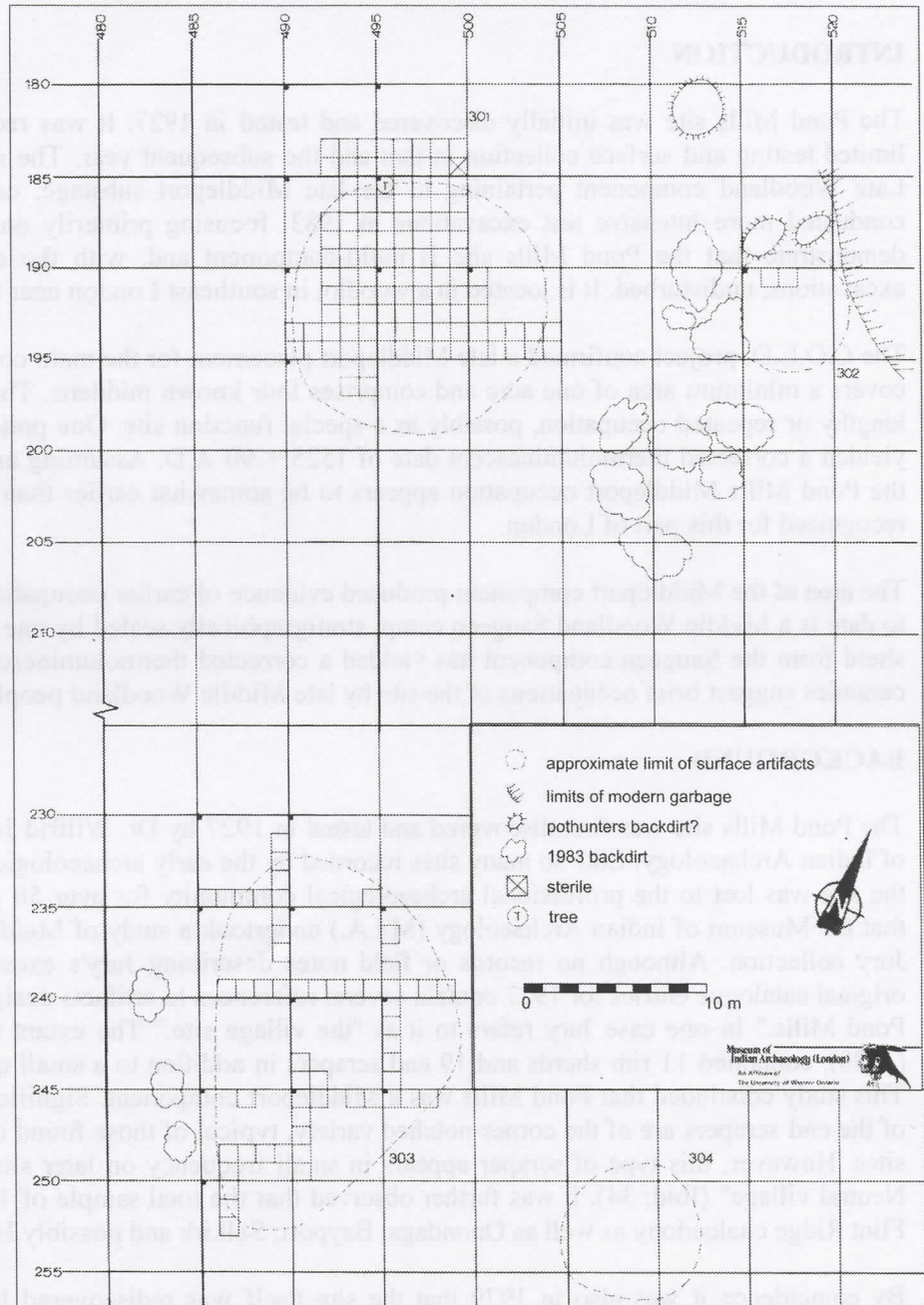


Figure 1. The Pond Mill Site Middens and Extent of Excavations

terms of present agricultural land use, all of the above are as previously described for Guelph Loam (see KEWA 2007 #7-8: 4). Of these various clay loams, Perth is nearly neutral and Guelph, Huron and London are slightly acidic to nearly neutral. Excavations on the site itself indicate that soils in the southern part of the site are predominantly clay and in the northern part predominately sandy with some clay pockets.

The generalized observations on the flora for the region previously reviewed may be supplemented with respect to the Pond Mills site by four sources: a casual examination of the vicinity in 1983; the results of a nearby pollen core; the archaeobotanical analysis of a small sample of carbonized material from Midden 301; and historic vegetation data recorded for Westminster Township in the early nineteenth century. Concerning the first, the western part of the woodlot is lightly forested with relatively little undergrowth. The species are dominated by sugar maple and beech and in fact the woodlot was maintained as a sugar bush by the former owners until some 30 years ago. It has never been ploughed or fully cleared although it has been subjected to selective, non-mechanized logging. The eastern part of the woodlot, east of the dirt lane, consists of younger and denser secondary growth dominated by hawthorn and high weeds. Historic vegetation data have not survived for the part of London which encompasses the site, but all of the area of the former Westminster Township within one or a few kilometres to the east, south and west consisted of a beech and maple forest in the period 1810-1820 A.D. (Finlay 1978). The logical inference that these conditions also applied to the Pond Mills area at that time is only partly supported by the results of a pollen core obtained from North Pond by J.H. McAndrews (1981) of the Royal Ontario Museum. This core revealed a complete sequence from zone 1 (forest tundra) to zone 4 (modern). The portion of the profiles for the early nineteenth century A.D. show a dominance of oak followed by beech, pine and maple, all in an at least short-term decline correlating with the rise of ragweed and grasses which mark the pioneer clearance of the area (Ibid: Figure 3(a)). Finally, available archaeobotanical data are limited to the results of an analysis by Rudy Fecteau of a small flotation sample from Midden 301 (Keron 1981). Fecteau noted the presence of corn kernel fragments as well as charcoal pertaining to maple, hickory, beech, ash, ironwood and elm. A small sample of faunal material from Middens 301 and 303, analysed by D.L. Pihl (Ibid), has been identified as deer.

Investigations to date indicate that the site covers a minimum area of one acre. The area in question is generally quite level, and there are effectively no natural limits or slope to confine or define the site. This area subsumes three definite middens and one possible midden; two are located at the northern extremity of the site and two at the southern, with a maximum north-south distance of approximately 70 meters between the outer edges of the deposits.

DESCRIPTION OF INVESTIGATIONS

The Pond Mills site was the third and last to be excavated by the C.O.E.D. program. As the only one of the three not facing immediate destruction through development, it was subjected to a less intensive investigation. The aims of this were to achieve a more accurate assessment of the site in order to enable detailed planning for fuller future salvage and/or research excavations. Within this context a related aim was to examine and assess damage done to the site by recent pot hunting, to forestall future pot hunting insofar as possible, and to determine if possible the location and limits of Jury's 1927 excavations. These aims were to be achieved through limited salvage and test excavations on middens. Upon completion of the 1983 excavations the site was manually backfilled.

As summarized earlier, research prior to 1983 had established unequivocally the presence of two middens on the site. An intensive surface examination in 1983 located an additional two middens, bringing the total to four. These were assigned individual consecutive numbers for purposes of reference, excavation and cataloguing (Figure 1). A detailed testing or complete salvage of each was unrealistic given the time available. Accordingly, efforts were concentrated on an extensive salvage of Keron's northern midden, Midden 301, and an extensive trenching of his southern midden, Midden 303, where Jury had dug and where pot hunters had been active in 1981. Midden 302 was also tested. Midden 304 was examined merely by cursory test pitting.

A total of 178 person days were spent on the Pond Mills site, resulting in the excavation of 171 square meters as individual subsquares. The excavation involved a total volume of 31.3 cubic meters of soil. Twenty-nine floatation samples from 16 subsquares, with a combined volume of 428 litres, were taken in the process. As usual, all fire-cracked rock was retained for later examination, all excavated soils were screened, and excavations were conducted by either shovel or trowel. No post moulds or features were noted.

Middens and Components

Midden 301 is the second largest refuse deposit on the site. Surface material indicates that this midden is roughly circular in shape and a minimum of some 14 meters in diameter, with a total surface area of at least 170 square meters. The excavated area of Midden 301 comprised 114 square meters, with a total volume of 20.5 cubic meters and a depth range and mean to subsoil of 8-30 cm and 18.0 cm, respectively (Figure 1). The 1983 excavations thus effected the salvage of approximately 70% of Midden 301. Initial and subsequent excavations in this midden demonstrated a total absence of visible stratigraphy, the fill consisting of homogeneous artifact-rich topsoil. Nevertheless, several subsquares were excavated in arbitrary 10 cm levels in order to achieve some vertical control.

The excavations indicate the Midden 301 is essentially a pure deposit pertaining to the Middleport occupation. Although four pre-Iroquoian projectile points were recovered from this midden, the specimens range in age from Early Archaic to Middle Woodland, and this together with provenience data suggest that most or all of these represent Iroquoian curios rather than earlier in-situ components. However, the midden also produced one artifact which does suggest an earlier occupation; it is a neck sherd from a vessel attributed to the Princess Point Culture (Stothers 1977). This artifact was recovered from the centre of Midden 301. It has been designated Vessel E and is analysed and discussed elsewhere.

Midden 302 was subjected to less intensive investigations in 1983, owing both to a lack of time and to a desire not to advertise its existence to the present generation of pot hunters. Consequently, work on Midden 302 was limited to the excavation of two one-meter squares, and particular care was taken to cover all traces once the project was completed so that this midden would survive for future excavation.

Surface indications suggest that Midden 302 is relatively small, with a diameter of roughly seven meters and a surface area of some 30 square meters. More extensive excavations may demonstrate the deposit to be larger, however. According to a local informant, this midden was the target of pot hunters in the 1950's and pits and backdirt ascribed to this disturbance were identified to the writer just north of the known edge of this midden (Figure 1) (R. Calvert, personal communication, August, 1983). It is also possible that Midden 302 extends further eastward, into an area largely obscured at present by a modern deposit consisting of fill and waste concrete and tarmac.

The two excavated subsquares of Midden 302 had depths to subsoil of 16 cm and 23 cm, respectively, with a combined volume of 0.4 cubic meters. The basal several centimetres of each subsquare comprised an ash lens or layer overlaid by topsoil: both layers were excavated and screened separately. Cultural remains were relatively abundant and appear to be consistent with the Late Woodland occupation, although no rims were recovered.

Midden 303 is the largest refuse deposit on the site, and also the most complex. Surface indications suggest that it covers an ovate-shaped area some 200 square meters in extent. It was this midden which had been partially excavated by Jury in 1927 and which had been further disturbed by pot hunters in 1981. Indeed, the conventional wisdom was that Midden 303 had been extensively disturbed if not effectively destroyed, a belief shared not only by professional archaeologists but also by the pot hunters who had worked on Midden 302 in the 1950's (R. Calvert, personal communication, August, 1983).

In order to test this belief and to determine a strategy for the 1983 excavations, the writer began Midden 303 by digging five 30 cm square test pits. These demonstrated that the disturbance was confined to the centre of the midden, that in most or all cases previous excavations had not reached subsoil, and further that the deposit was stratified. Given the above factors it was clear that the investigation of Midden 303 would not be the simple mop-up operation which had been anticipated. Rather, circumstances dictated a more detailed testing through the use of cross-trenches aimed at determining as much as possible in the little time available concerning the nature of the deposit and the extent of the disturbance. This task was complicated when, after only one day of excavation, it was recognized that the basal layer of the midden represented a pure, pre-Iroquoian component. Thereafter all excavations in the undisturbed, deeply stratified portions of Midden 303 were conducted by trowel rather than shovel, and the relevant units were excavated by natural strata. Multiple soil and flotation samples were retained from each of these, the former for potential future chemical and pollen analyses. Finds from these and all other subsquares excavated in Midden 303 were carefully examined for evidence of multi-componency while the excavation was in progress in order to define the vertical and lateral distribution of the pre-Iroquoian occupation(s).

In all, the Midden 303 work involved the excavation of 55 square meters with a total volume of 10.3 cubic meters. The range and mean depth to subsoil of the excavation units were 9-43 cm and 19.8 cm, respectively. The excavation revealed a maximum of five strata in Midden 303. These are best exemplified in Figure 2. Layers 1 and 2 are the thickest, richest and most pervasive, and both pertain to the Middleport component. Layer 1 consists of topsoil with an average thickness of about 10 cm and is continuous across the entire midden. Layer 2 consists of ash heavily mottled with topsoil and some subsoil, with an average depth of about seven cm: it is discontinuous but occurs throughout most or all but the periphery of the midden. Layers 3-5 seem to be more confined to the central part of Midden 303. Layers 3 and 4 were relatively thin and sterile and in consequence are of indeterminate age or origin. Layer 3 consists of a dark, homogeneous soil and may represent the pre-Iroquoian sod line: it averages about five cm in thickness. Layer 4 is brown to reddish-brown in colour and features a few flecks of fire-reddened soil. These characteristics suggest the proximity of one or more

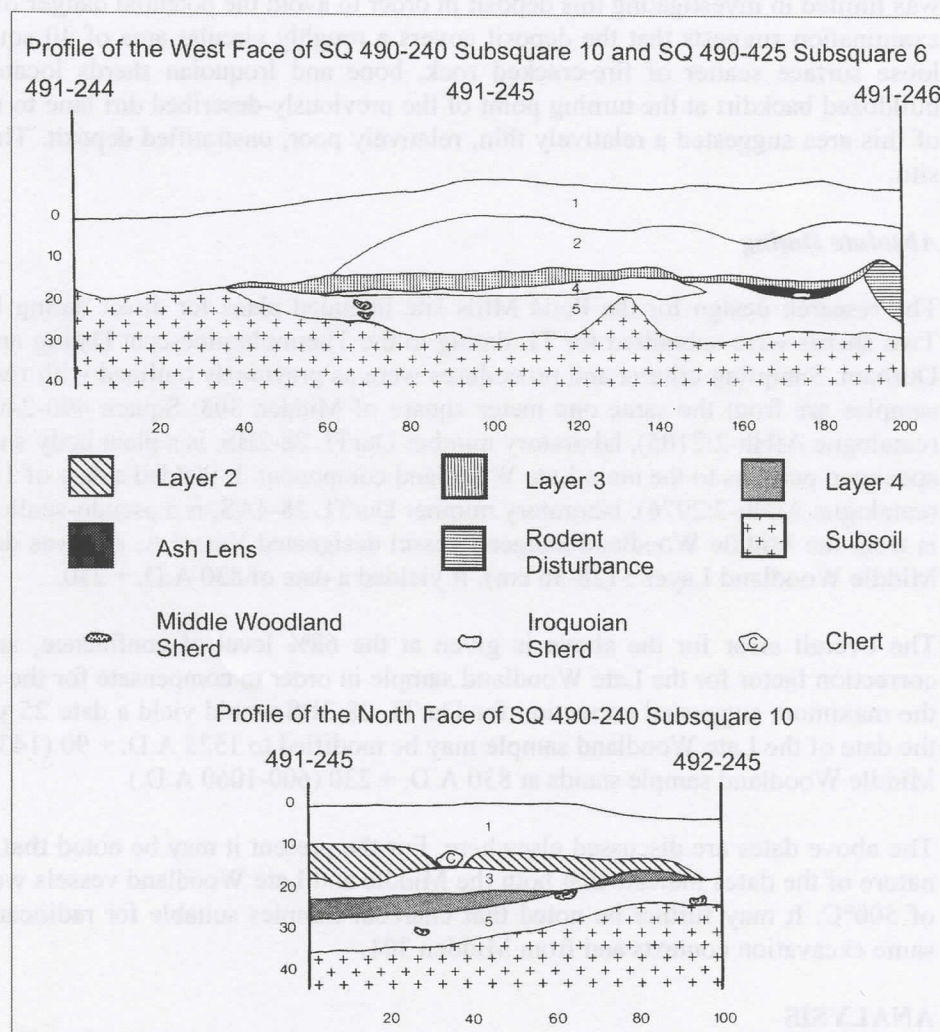


Figure 2. Profiles of Midden 303

hearths and it is even possible that is what Layer 4 represents. Layer 5 resembles Layer 2, but is a somewhat lighter grey in colour: this layer is charcoal-flecked and has an average thickness of about nine cm. Layer 5 produced few artifacts or cultural debris other than ceramics: these almost solely comprised sherds from four vessels attributed to the Middle Woodland Saugeen Culture (Finlayson 1977).

Some component mixing is indicated by the fact that a few Iroquoian sherds were recovered from Layer 5. Several probable causes may be cited for this. For example, some degree of downward contamination doubtless resulted from earthworm action and rotted-out root systems, while vertical contamination in both directions may have resulted from excavation given that Layers 1 and 5 and 2 and 5 interface at several points. These include the whole north-east half of Square 490-240, Subsquare 10, (Figure 2), one of the richest excavation units for Middle Woodland ceramics, where the Iroquoian Layer 2 directly overlies the Saugeen Layer 5. The precise distributions and associations of the pre-Iroquoian ceramics are detailed elsewhere.

Midden 304, the only remaining midden to be described here, was not excavated in 1983, and even test pitting was limited in investigating this deposit in order to avoid the potential danger of attracting pot hunters. A surficial examination suggests that the deposit covers a roughly circular area of 40 square meters: this area comprises a loose surface scatter of fire-cracked rock, bone and Iroquoian sherds located between Midden 303 and the bulldozed backdirt at the turning point of the previously-described dirt lane to the southeast. A casual test-pitting of this area suggested a relatively thin, relatively poor, unstratified deposit. The few artifacts noted were left in-situ.

Absolute Dating

The research design for the Pond Mills site included plans for direct dating by thermoluminescent techniques. Two sherds were submitted for TL dating to the Thermoluminescent Dating and Research Service, University of Durham. Sampling criteria and procedures were as previously outlined with respect to the Magrath site. Both TL samples are from the same one meter square of Midden 303: Square 490-240, Subsquare 10. The first sample (catalogue AfHh-2:2105), laboratory number DurTL 28-2BS, is a plain body sherd from Layer 2 (11-18 cm). This specimen pertains to the main Late Woodland component. It yielded a date of 1550 A.D. + 90. The second sample (catalogue AfHh-2:2976), laboratory number DurTL 28-4AS, is a pseudo-scallop shell decorated body sherd. This is from the Middle Woodland Saugeen vessel designated Vessel A, and was derived from the lower range of the Middle Woodland Layer 5 (28-36 cm). It yielded a date of 830 A.D. + 230.

The overall error for the above is given at the 68% level of confidence, and the laboratory has estimated a correction factor for the Late Woodland sample in order to compensate for the relative shallowness of its context: the maximum suggested correction for DurTL 28-2BS would yield a date 25 years earlier than that stated. Thus, the date of the Late Woodland sample may be modified to 1525 A.D. + 90 (1435-1615 A.D.) while the date of the Middle Woodland sample stands at 830 A.D. + 230 (600-1060 A.D.).

The above dates are discussed elsewhere. For the present it may be noted that, as with the Magrath samples, the nature of the dates indicate that both the Middle and Late Woodland vessels were fired at a temperature in excess of 500°C. It may further be noted that charcoal samples suitable for radiocarbon dating are available from the same excavation contexts and from Midden 301.

ANALYSIS

Cultural materials recovered from the Pond Mills site in 1983 are presented in Table 1. These have been separated on the basis of provenience data and intrinsic characteristics into three "components": Late Woodland; Middle Woodland; and Historic. The latter comprises a small sample of recent refuse pertaining to the occasional use of the site and area for recreational and other activities.

Tale 1. Pond Mills Site Frequency of Cultural Remains

Component	Class	Category	N	Weight (gms)
LATE WOODLAND	Ceramics	Vessels (Rim Sherds)	107(186)	
		Fragmentary Rim Sherds	343	
		Neck-Shoulder Sherds	429	
		Body Sherds	2217	
		Fragmentary Sherds		17259
		Juvenile Vessel Fragments	616	
		Pipe Fragments	51	
		Misc. Ceramic Objects	2	
		Lumps of Clay	769	1572
	Chipped Stone	Projectile Points	13	
		Point Preforms	7	
		Drills	3	
		Pre-Iroquoian Bifaces	5	
		Misc. Bifaces	27	
		Scrapers	28	
		Pieces Esquillées	39	
		Utilized Flakes	75	
		Cores	92	
		Debitage	4568	12763
	Ground Stone	Celt	1	
		Miscellaneous	1	
	RoughStone	Abrader	84	
		Netsinkers	8	
		Netsinker-Abraders	7	
		Hammer Stones	10	
		Anvil Stones	4	
		Hammer-Anvil Stones	3	
		Manos	3	
		Miscellaneous	3	
		Fragments	65	
	Fire-Cracked Rock			50575
	Bone Tools	Modified Deer Phalanges	33	
		Awls	13	
		Beads	9	
		Modified Teeth	4	
		Miscellaneous	13	
	Faunal	Bone, Antler, Shell		10393
	Floral	Charcoal		2382
		Carbonized Plant Remains		27
		Float Residue		1436
MIDDLE WOODLAND	Ceramics	Vessels (Rim Sherds)	8(11)	
		Fragmentary Rim Sherds	1	
		Neck-Shoulder Sherds	14	
		Body Sherds	229	
		Basal Sherds	3	
HISTORIC	Various	Bottle Glass etc.	35	

The vast majority of remains pertain to the Late Woodland component: Middle Woodland remains are comprised entirely of diagnostic ceramics. A small amount of Iroquoian and undiagnostic refuse was recovered from the Middle Woodland Layer 5 of Midden 303, and from the overlying Layers 3 and 4. It seems probable that some or much of this undiagnostic refuse pertains to the Middle Woodland occupations, but this material is described with the predominant Late Woodland collections, as no confident component separation can be made in this regard. Iroquoian diagnostics and undiagnostic materials such as debitage etc. derived from Layers 3-5 are specifically referenced in the appropriate sections of the Late Woodland analysis. Pre-Iroquoian projectile points are similarly described in the context of the Late Woodland component as the majority pre-date even the Middle Woodland component, and as none can be associated with any degree of confidence with the latter.

The principles of analysis employed for the present collections are as previously described for the Magrath and Willcock sites (see KEWA 07 #7 & 8: 12-13). As a prelude to the Pond Mills analysis the catalogue data pertaining to the pre-1983 collections were entered into the computer. Relevant provenience data were then edited insofar as possible to correspond with excavation unit designations established in 1983. With a few minor exceptions these pre-1983 collections have not been incorporated into the present analyses. Jury's 11 rims (11 vessels) and Keron's 10 rims (3 vessels) have been included in the consideration of Late Woodland vessel typology. Similarly, one of Jury's rims and all of Keron's represent parts of vessels also represented in the 1983 collections, and these are accordingly included in the full attribute analysis. Finally, several of the Jury collection end scrapers are illustrated here for purposes

of discussion and comparison.

Ceramics

As summarized in Table 1, Late Woodland ceramics, particularly pottery vessel fragments, constitute a major portion of the cultural remains recovered in 1983. The analyses which follow include a detailed consideration of rim sherds by vessel count. Also considered in detail are body sherds, lumps of clay and ceramic pipe fragments.

Table 2. Pond Mills Site: Late Woodland Comparative Rim and Vessel Typologies 1927-1983 Samples

Table 2. Pond Mills Site: Late Woodland Comparative Rim and Vessel Typologies 1927-1983 Samples													Figure 3 Reference
Type	Midden 301				Midden 303				Total				
	Rims		Vessels		Rims		Vessels		Rims		Vessels		
	N	%	N	%	N	%	N	%	N	%	N	%	
Unknown	1	1.0	1	2.3	2	2.2	1	1.6	3	1.6	2	1.9	f
Lawson Opposed	2	2.1	1	2.3	3	3.3	2	3.2	5	2.7	3	2.8	e
Lawson Incised	1	1.0	1	2.3	1	1.1	1	1.6	2	1.1	2	1.9	j
Pound Necked	79	82.3	34	77.3	71	78.9	53	84.1	150	80.6	87	81.3	a & b
Pound Blank	8	8.3	5	11.4	1	1.1	1	1.6	9	4.8	6	5.6	d
Ontario Horizontal	1	1.0	1	2.3					1	0.5	1	0.9	k
Niagara Collared					3	3.3	2	3.2	3	1.6	2	1.9	g
Black Necked					5	5.6	2	3.2	5	2.7	2	1.9	i
Parker Festooned					4	4.4	1	1.6	4	2.2	1	0.9	h
Glen Meyer Necked	4	4.2	1	2.3					4	2.2	1	0.9	c
Totals	96	100.0	44	100.0	90	100.0	63	100.0	186	100.0	107	100.0	

Vessels

One hundred and sixty-five analysable rim sherds were recovered in 1983. Examples of the rims recovered are illustrated in Figure 3. Added to the rims recovered prior to 1983, these comprise a total sample of 186 rims pertaining to 107 vessels (average 1.7 rims per vessel). For comparative purposes these have been assigned to one of nine established types on the basis of MacNeish (1952), J.V. Wright (1966) and Lee (1958). A tenth type designation, Unknown, has been used for specimens which do not correspond to the established types and/or which can be only analysed as castellations. Of significance is the fact that there were absolutely no vessel matches between middens 301 and 303, the only areas of the site that have yielded rim sherds to date. One consequence of this is that it was possible to compare the relative typologies for the two middens based upon both rim and vessel counts. These data are present in Table 2, above. It is worth noting that the ratios of rims per vessel for middens 301 and 303 are 2.1:1 and 1.4:1, respectively. The higher ratio for the former may be taken as a measure of the more complete excavation of Midden 301.

As Table 2 indicates, the Pound Necked pottery type is vastly predominant at Pond Mills. Whether enumerated by individual midden or for the sample as a whole, by rim or vessel count, it comprises a minimum of 77% and a maximum of 84%, with a total representation of 87 vessels. The second most common type, Pound Blank, forms no more than 5.6% (6 vessels) of the whole, while none of the remaining eight types exceeds 2.8% (3 vessels) of the whole. The results of analysis by rim versus vessel count are generally quite comparable, usually differing by only a few fractions of a percentage point. In terms of inter-midden comparisons, the results are similar with respect to the dominance of the Pound Necked type and the minor representation of Lawson Opposed, Lawson Incised, and Unknown. Some differences are, however, apparent. Midden 301 features a somewhat lower percentage of Pound Necked ceramics and a higher incidence of the Pound Blank type. Differences are also apparent in the presence and absence of types: while Midden 301 features seven types and Midden 303 features eight types, the two middens only share five of the ten types represented in the total sample. The Ontario

Table 3. Pond Mills Site: Select Non-Metrical Attributes of Late Woodland Vessels							
Attribute	Variable	Midden 301		Midden 393		Total	
		N	%	N	%	N	%
Rim Form	Collared	42	95.5	53	98.1	95	96.9
	Collarless	2	4.5	1	1.9	3	3.1
	Total	44	100.0	54	100.0	98	100.0
Rim Orientation	Indeterminate	35	79.6	50	92.6	85	86.7
	Vertical	6	13.6	4	7.4	10	10.2
	Outflaring	3	6.8			3	3.1
	Total	44	100.0	54	100.0	98	100.0
Exterior Profile	Concave	9	20.4	12	22.2	21	21.4
	Convex	8	18.2	6	11.1	14	14.3
	Straight	27	61.4	36	66.7	63	64.3
	Total	44	100.0	54	100.0	98	100.0
Interior Profile	Concave	10	22.7	17	31.5	27	27.6
	Convex	6	13.6	5	9.3	11	11.2
	Straight	22	50	31	57.4	53	54.1
	Concave-Convex	5	11.4	1	1.8	6	6.1
	Convex-Concave	1	2.3			1	1
	Total	44	100.0	54	100.0	98	100.0
Lip Form	Indeterminate	1	2.3	2	3.7	3	3.1
	Flat	40	90.9	51	94.4	91	92.8
	Rounded	3	6.8	1	1.9	4	4.1
	Total	44	100.0	54	100.0	98	100.0
Lip Angle	Indeterminate			4	7.4	4	4.1
	Acute	3	6.8	5	9.3	8	8.2
	Right	12	27.3	17	31.5	29	29.6
	Obtuse	29	65.9	28	51.8	57	58.1
	Total	44	100.0	54	100.0	98	100.0
Collar Base Shape	Rounded	19	45.2	25	47.2	44	46.3
	Angular	23	54.8	28	52.8	51	53.7
	Total	42	100.0	53	100.0	95	100.0

Table 4. Pond Mills Site: Correlation of Exterior/Interior Rim Profile Shape*							
Exterior Shape	Interior Shape	Midden 301		Midden 303		Total	
		N	%	N	%	N	%
Concave	concave	3	6.8	2	3.7	5	5.1
	convex	3*	6.8	4*	7.4	7**	7.1
	straight	3*	6.8	6	11.1	9*	9.2
Convex	concave	2	4.5	3	5.6	5	5.1
	straight	5	11.4	3	5.6	8	8.2
	concave-convex	1	2.3		0.0	1	1.0
Straight	concave	5	11.4	12	22.2	17	17.4
	convex	3	6.8	1	1.9	4	4.1
	straight	14	31.8	22	40.7	36	36.7
	concave-convex	4	9.1	1	1.9	5	5.1
	convex-concave	1	2.3		0.0	1	1.0
Total		44	100.0	54	100.0	98	100.0

*Includes 1 collarless vessel. **Includes 2 collarless vessels.

Horizontal and Glen Meyer Necked types are only represented in Midden 301, albeit by single vessels. Conversely, Black Necked (a Huron type) Parker Festooned (a Western Basin Tradition type) and Niagara Collared, are only represented in Midden 303.

Physical Characteristics

All 98 vessels considered for purposes of detailed analysis are grit tempered. Two vessels also include single fragments of thermally altered chert debitage, presumably burnt in the firing process: these are present in a Pound Necked type vessel represented by one rim, and in one rim of the Parker Festooned vessel. Both are from Midden 303. An absence of identifiable basal sherds argues that globular shaped vessels were the norm or sole form. Collared vessels comprise 97% of the total sample (N-95); collarless vessels constitute the remaining 3% (N-3).

Non-metrical attributes are summarized in Tables 3 and 4; metrical attributes are presented in Table 5. Rim orientations could be determined for 13 vessels (13%). Ten vessels were oriented vertically, six from Midden 301 and four from Midden 303, and three vessels were outflaring, all from Midden 301.

The attribute of exterior rim shape is dominated by straight specimens (64.3%) followed by concave (21.4%) and convex (14.3%) (Table 3). These proportions are roughly duplicated for each midden sample, although the occurrence of rims with convex exteriors is somewhat higher for Midden 301. The interior rim shape for the total vessel

Table 5. Pond Mills Site: Select Metrical Attributes of Late Woodland Vessels

Attribute	Variable	Midden 301	Midden 303	Total
Collar Height*	N	42	53	95
	Range (mm)	9-48	13-33	9-48
	Mean (mm)	18.7	18.5	18.6
Basal Collar* Thickness	N	42	53	95
	Range (mm)	2-16	5-18	2-18
	Mean (mm)	10.4	10	10.2
Lip Width	N	44	53	97
	Range (mm)	5-15	4-14	7-15
	Mean (mm)	7.1	7.1	7.1
Orifice Diameter	N	18	23	41
	Range (mm)	100-480	80-340	80-480
	Mean (mm)	240	182.6	207.8

* Collared vessels only

correspondingly lower incidence of the straight-concave and concave-straight configurations, and a higher incidence of convex-straight and straight-concave-convex profiles. For many vessels the exterior and interior profile shapes assumed subtle variations which could only be characterized as a subjective mean. Thus, some individual rims varied in exterior shape from slightly concave to straight and convex. Similarly, some individual rim interiors ranged in shape from convex to straight and slightly channelled. Lip form could be determined for all but three vessels. Of the total sample of 98 the vast majority (N-91, 92.9%) have flattened lips. Rounded lips appear to be more common in Midden 301 than in 303 (Table 3).

The attribute of lip angle to interior could be determined for all but four vessels. The total sample is dominated by obtuse-angled lips (N-57, 58.2%), followed by right-angled lips (N-29, 29.6%). Midden 301 has a comparatively higher incidence of obtuse-angled lips and a correspondingly lower incidence of other forms. For most of the obtuse-angled examples the obtuseness is marked: a suggested angle of 120° would probably represent a reasonably accurate mean.

Lip width could be determined for all but one vessel. This measurement displays a range and mean of 4-15 mm and 7.1 mm, respectively (Table 5), with no significant inter-midden variation.

Maximum vessel orifice diameter could be determined for 41 vessels: these display a range and mean of 80-480 mm and 208 mm, respectively. Inter-midden comparisons indicate a greater range and a larger average vessel size for Midden 301 specimens. The attributes of collar base shape, collar height, and basal collar thickness were observed for all 95 collared vessels (Table 3). Collar base shape, the measure of collar development, is somewhat evenly split for the combined sample between angular (well-developed) (N-51, 53.7%) and rounded (poorly-developed) (N-44, 46.3%), with comparable results for both middens. It should be noted that this attribute, like that of rim profile, was a rather subjective measurement of collar development in that individual specimens could vary from angular to rounded over a short distance.

The measurements of collar height for the combined sample exhibit a range and mean of 9-48 mm and 18.6 mm, respectively. Following Ramsden (1977:149), four vessels have collar heights in excess of 30 mm and are considered high collared. These comprise one vessel each of the Lawson Opposed and Pound Necked types from Midden 301, and two vessels of the latter type from Midden 303. The mean measurements of collar height for the two middens are comparable, although Midden 301 displays a greater range. The measurement of basal collar thickness displays a range and mean of 2-18 mm and 10.2 mm, respectively, with no significant variation between middens (Table 5).

sample is dominated by straight (54.1%) followed by concave (27.6%) and convex (11.2%) (Table 3). Compared to Midden 303, Midden 301 shows a slight trend toward fewer straight or concave interior rims and more concave-convex interiors. The correlations of exterior and interior profile shape (Table 4) indicate that the most common configuration is straight-straight (36.7%), followed by straight-concave (17.4%), concave-straight (9.2%), convex-straight (8.2%) and concave-convex (7.1%). A comparison of the two middens indicates a trend toward a lower but still predominant incidence of the straight-straight configuration for Midden 301, together with a

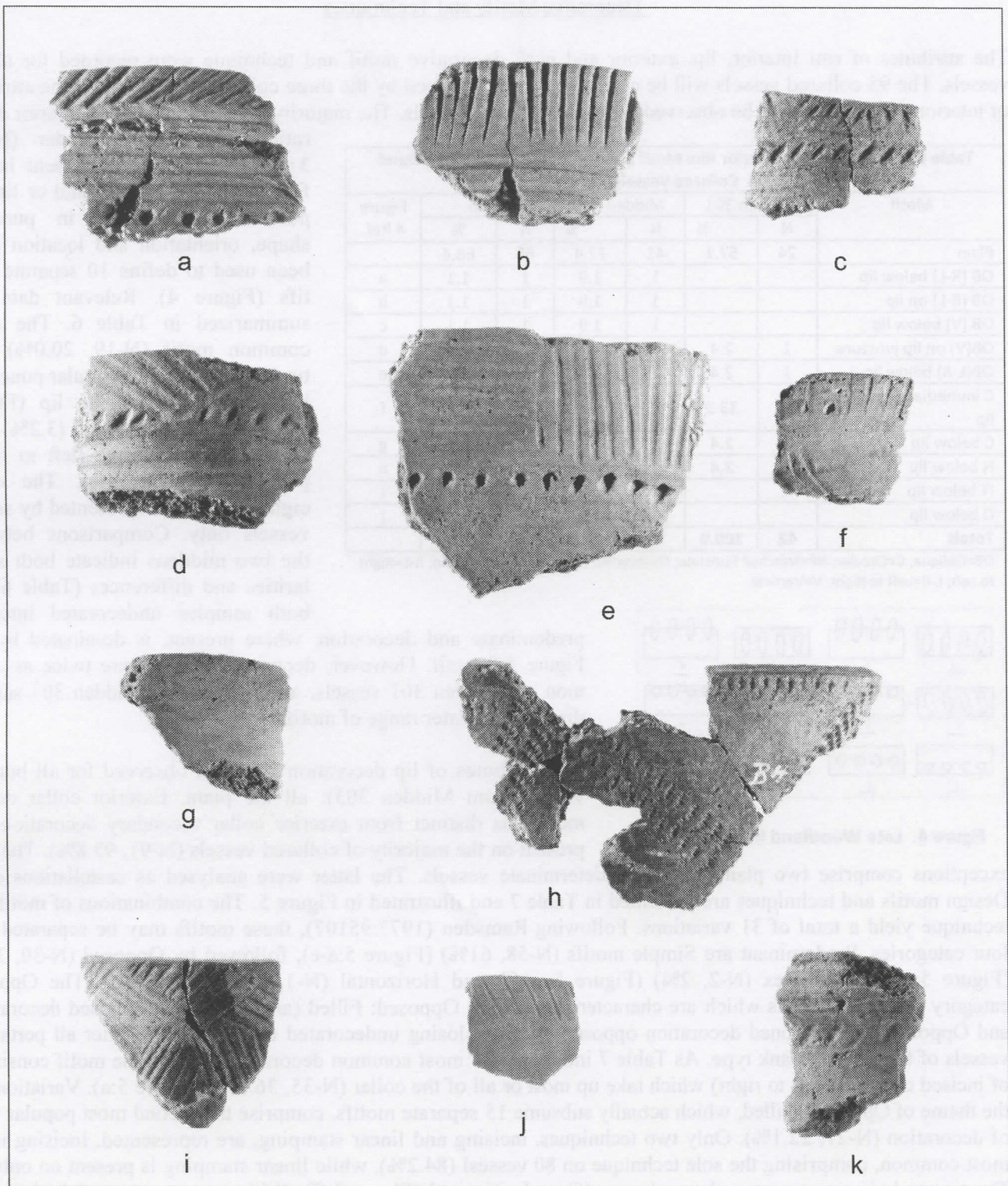


Figure 3. Pond Mills Site: Rim Sherds

Decorative Motifs and Techniques

The attributes of rim interior, lip, exterior and neck decorative motif and technique were recorded for all 98 vessels. The 95 collared vessels will be considered first, followed by the three collarless specimens. The attribute of interior decoration could be observed for all 95 collared vessels. The majority (N-65, 68.4%) lack interior decoration.

Table 6. Pond Mills Site: Interior Rim Motif and Technique of Late Woodland Collared Vessels

Motif	Midden 301		Midden 303		Total		Figure 4 Ref.
	N	%	N	%	N	%	
Plain	24	57.1	41	77.4	65	68.4	
OB (R-L) below lip			1	1.9	1	1.1	a
OB (R-L) on lip			1	1.9	1	1.1	b
OB (V) below lip			1	1.9	1	1.1	c
OB(V) on lip juncture	1	2.4			1	1.1	d
OB(L-R) below lip	1	2.4	2	3.8	3	3.2	e
C immediately below lip	14	33.3	5	9.4	19	20.0	f
C below lip	1	2.4			1	1.1	g
N below lip	1	2.4			1	1.1	h
IT below lip			1	1.9	1	1.1	i
D below lip			1	1.9	1	1.1	j
Totals	42	100.0	53	100.0	95	100.0	

OB=Oblique; C=Circular; NP=Notched Punctate; IT=Inverted Triangular; D=Diamond; R-L=Right to Left; L-R=Left to Right; V=Vertical.

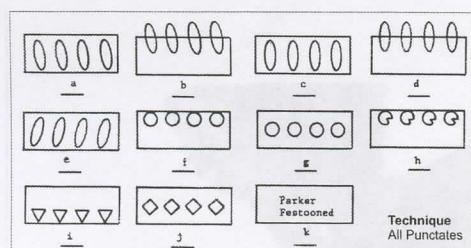


Figure 4. Late Woodland Interior Motifs

exceptions comprise two plain and two indeterminate vessels. The latter were analysed as castellations only. Design motifs and techniques are presented in Table 7 and illustrated in Figure 5. The combinations of motif and technique yield a total of 31 variations. Following Ramsden (1977:95107), these motifs may be separated into four categories. Predominant are Simple motifs (N-58, 61%) (Figure 5:a-e), followed by Opposed (N-30, 32%) (Figure 5:g-dd), Complex (N-2, 2%) (Figure 5:ee-ff) and Horizontal (N-1, 1%) (Figure 5:f). The Opposed category subsumes motifs which are characterized here as Opposed: Filled (areas of zoned opposed decoration) and Opposed: Blank (zoned decoration opposed by or enclosing undecorated triangles). The latter all pertain to vessels of the Pound Blank type. As Table 7 indicates, the most common decoration is a Simple motif consisting of incised obliques (left to right) which take up most or all of the collar (N-35, 36.8%) (Figure 5:a). Variations on the theme of Opposed: Filled, which actually subsume 15 separate motifs, comprise the second most popular form of decoration (N-21, 22.1%). Only two techniques, incising and linear stamping, are represented. Incising is the most common, comprising the sole technique on 80 vessels (84.2%), while linear stamping is present on only 10. The two techniques occur together only one (Complex) vessel (Figure 5:ff). With the exception of the latter the linear stamp technique is confined to motifs of the Simple category where it occurs on 17% of the 58 vessels. Comparisons between the two middens indicate several differences. Midden 301 features approximately 15% more Simple motifs, and a correspondingly lower percentage of Opposed motifs, as well as nearly double the percentage of linear stamped motifs (Table 7).

For the remainder (N-30, 31.6%) decoration is present in the form of an encircling band or line of punctates. Variations in punctate shape, orientation and location have been used to define 10 separate motifs (Figure 4). Relevant data are summarized in Table 6. The most common motif (N-19, 20.0%) features a line of small circular punctates immediately below the lip (Figure 4:f). Three other vessels (3.2%) feature a line of oblique (left to right) punctates (Figure 4:e). The other eight motifs are represented by single vessels only. Comparisons between the two middens indicate both similarities and differences (Table 6). In both samples undecorated interiors

predominate and decoration, where present, is dominated by the Figure 4:f motif. However, decorated interiors are twice as common on Midden 301 vessels, and the smaller Midden 303 sample displays a greater range of motifs.

The attributes of lip decoration could be observed for all but one vessel (from Midden 303): all are plain. Exterior collar design motifs, as distinct from exterior collar secondary decoration, are present on the majority of collared vessels (N-91, 95.8%). The four

Table 7. Pond Mills Site: Exterior Rim Design Motifs and Techniques of Late Woodland Collared Vessels

Category	Motif	Midden 301		Midden 303		Total		Fig. 5 Ref.
		N	%	N	%	N	%	
Simple	OB (L-R) (In)	16	0.4	19	0.4	35	0.4	a
	OB(L-R)(St)	4	0.1	1	0.0	5	0.1	b
	OB(V)(In)	5	11.9	4	7.5	9	9.5	c
	OB(V)(St)	2	4.8	3	5.7	5	5.3	d
	OB(R-L)(In)	2	4.8	2	3.8	4	4.2	e
	<i>Subtotal</i>	29	69.0	29	54.7	58	61.1	
Horizontal	HO(3 lines) (In)	1	2.4		0.0	1	1.1	f
Opposed	OF (In)	4	9.5	17	32.1	21	22.1	g-u
	OBK(In)	6	14.3	3	5.7	9	9.5	v-dd
	<i>Subtotal</i>	10	23.8	20	37.7	30	31.6	
Complex	CR/OB(R-L)(In)	1	2.4			1	1.1	ee
	OB(Var)(St)>							
	HO(1 line) (In)	1	2.4			1	1.1	ff
	<i>Subtotal</i>	2	4.8			2	2.1	
Plain	None			2	3.8	2	2.1	
Indeterminate	Indeterminate			2	3.8	2	2.1	
Total		42	100.0	53	100.0	95	100.0	

OB=Oblique; HO=Horizontals; OF=Opposed:Filled; OBK=Opposed:Blank; CR=Crossed; In=Incised; St=Stamped; R-L=Right to Left; L-R=Left to Right; Var=Variable

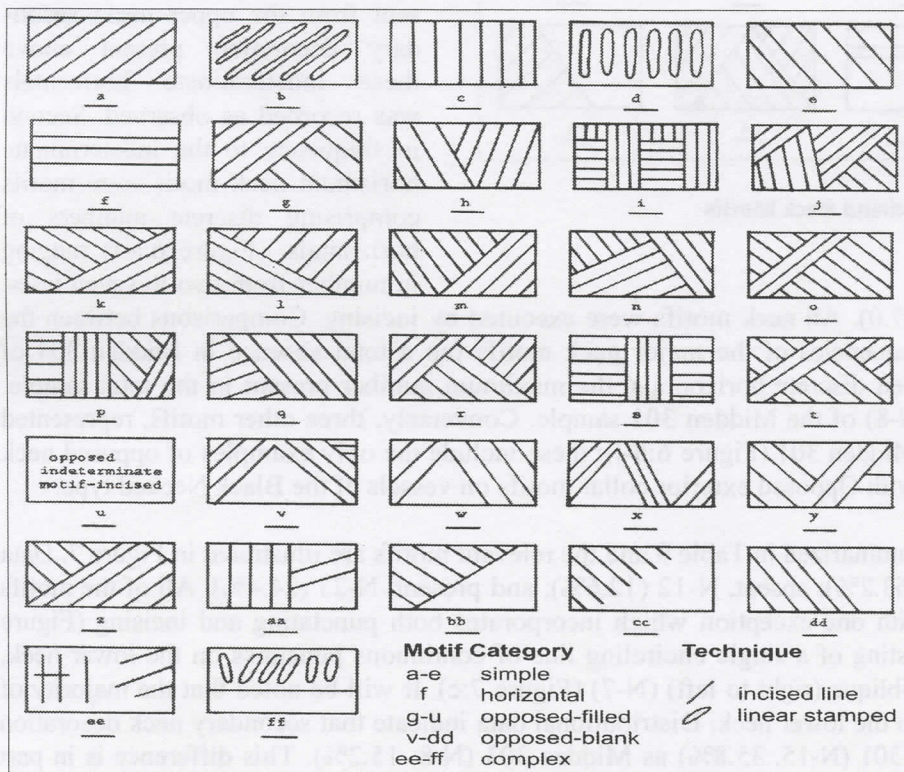


Figure 5. Late Woodland Exterior Collar Motifs

collar over indeterminate horizontal neck motif for Midden 301. Also apparent for Midden 301 is a higher incidence of the incised Simple collar over horizontal neck and a lower incidence of the incised Opposed collar over

Midden 301 also features the only examples of Complex and Horizontal motifs and an absence of undecorated vessel collars. The lower incidence of Opposed motifs in Midden 301 actually masks another variation: Opposed: Blank motifs are in reality almost three times as common in Midden 301, while the Opposed: Filled motifs are three times as common in Midden 303.

Exterior design motif combinations for the total sample of collared vessels and for the individual midden samples indicates that the majority (N=30, 31.5%) comprise vessels with Simple collar motifs over necks decorated by an indeterminate number of horizontal lines, all executed by incising, for which secondary collar and neck decoration are absent and indeterminate, respectively. The second most common combination (N=13: 13.7%) differs from the above only in that the collar motif is Opposed. The attribute of secondary collar decoration was determinable for 93 of the 95 collared vessels. Only six examples are present, all in the form of continuous or discontinuous encircling lines of oblique (left to right) or circular punctuates at the bottom and/or top of the collar. The majority of these (N=5) occur in Midden 301 where they are present as a component of rims of the Pound Blank type. Other differences between the two middens with respect to design motif combinations include a somewhat higher incidence of the predominant incised Simple

Table 8. Pond Mills Site: Neck Motifs and Techniques of Late Woodland Collared Vessels, Middens 301 and 303

Motif	Midden 301		Midden 303		Total		Figure 6 Ref.
	N	%	N	%	N	%	
Plain	4	9.5	6	11.3	10	10.5	
HO (2 lines) (In) > Plain			2	3.8	2	2.1	a
HO (3 lines) (In) > Plain	3	7.1	4	7.5	7	7.4	b
HO (4 lines) (In) > Plain	3	7.1	3	5.7	6	6.3	c
HO (5 lines) (In) > Plain	4	9.5			4	4.2	d
HO (6 lines) (In) > Plain	3	7.1			3	3.2	e
HO (7 lines) (In) > Plain	1	2.4			1	1.1	f
Number Unknown (In) > ?	24	57.1	35	66.0	59	62.1	g
Plain/HO (2 lines) (In) > Plain			1	1.9	1	1.1	h
OF (In) ?			1	1.9	1	1.1	i
OBK (In) > ?			1	1.9	1	1.1	j
Total	42	100.0	53	100.0	95	100.0	

HO=Horizontals, OF=Opposed Filled, OBK=Opposed Blank, In=Incised

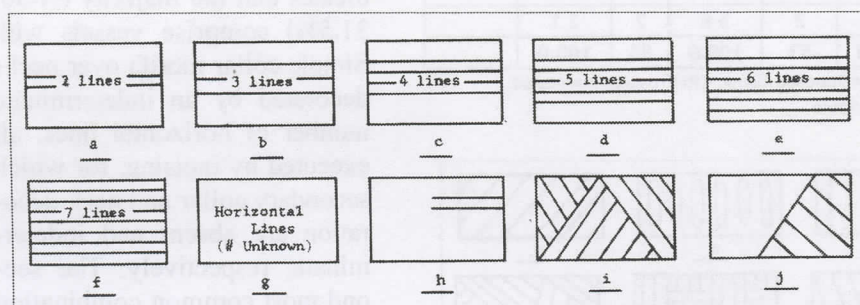


Figure 6. Late Woodland Neck Motifs

above plain lower necks (N-1-7, 1.1-7.0). All neck motifs were executed by incising. Comparisons between the two middens demonstrate similar frequencies of the major neck motifs but a total absence in Midden 303 of motifs which feature five, six or seven discrete horizontals, the maximum number present in the total sample. These three motifs constitute 19% (N-8) of the Midden 301 sample. Conversely, three other motifs, represented by discrete vessels, are absent from Midden 301 (Figure 6:h-j): these include the only examples of opposed neck motifs, both of which are associated with Opposed exterior collar motifs on vessels of the Black Necked type.

Secondary neck decoration data are summarized in Table 9 and the relevant motifs are illustrated in Figure 7. Data are as follows: indeterminate, N-60 (63.2%); absent, N-12 (12.6%); and present, N-23 (24.4%). All of the motifs are executed by punctating alone, with one exception which incorporates both punctating and incising (Figure 7:g). Most common are motifs consisting of a single encircling line of continuous punctates on the lower neck, either circular (N-9) (Figure 7:e) or oblique (right to left) (N-7) (Figure 7:c). It will be noted that the majority of secondary neck motifs are confined to the lower neck. Distributional data indicate that secondary neck decoration is over twice as common in Midden 301 (N-15, 35.8%) as Midden 303 (N-8, 15.2%). This difference is in part due to the lower incidence of the Figure 7:c motif in Midden 303. Concurrently, there is an absence of upper neck secondary decoration in Midden 303. Two aberrant motifs, represented by single vessels, are confined to Midden 303.

indeterminate horizontal neck (secondary collar and neck decoration absent and indeterminate, respectively). The latter design motif combination is five times as common in Midden 303.

Data pertaining to neck motifs and decorative techniques are summarized in Table 8. The relevant motifs are illustrated in Figure 6. All but 10 vessels (10.5%) feature major decorative neck motifs. Most common are necks which have an unknown number of horizontal incised lines on the upper neck, with the lower neck missing (N-59, 62.1%) (Figure 6:g). It should be noted that for vessels where this motif applied the attribute of secondary neck decoration was considered indeterminate when secondary motifs were absent from the upper neck; secondary decoration present above these indeterminate horizontals was recorded as observed. Second in frequency to the indeterminate horizontal neck motif were motifs comprising discrete numbers of horizontals, (Figure 6:a-f) ranging in number from two to seven lines,

The three collarless vessels comprise two specimens from Midden 301 and one from Midden 303. The first example from Midden 301 (Figure 3:b) has been assigned to the Pound Necked type in Table 2. The exterior decoration consists of a Simple motif (obliques, right to left) over horizontals (indeterminate number), all executed by incising. The interior and lip are plain. The physical characteristics of the vessel, included in the Table 3 and 4 data, include a concave-straight exterior-interior profile, an obtuse angle of the interior to lip, and a flat lip with a lip width of 9 mm. No secondary decoration is apparent.

Table 9. Secondary Neck Decoration of Late Woodland Collared Vessels, Middens 301 and 303

Motif	Midden 301		Midden 303		Total		Figure 7 Reference
	N	%	N	%	N	%	
Indeterminate	24	57.1	36	67.9	60	63.1	
Plain	3	7.1	9	17.0	12	12.6	
Encircling Band of Punctates (R-L) on UN	2	4.8			2	2.1	a
Encircling Band of Punctates (C) (discontinuous) on UN	1	2.4			1	1.1	b
Encircling Band of Punctates (R-L) on LN	6	14.3	1	1.9	7	7.3	c
Encircling Band of Punctates (L-R) on LN	1	2.4	1	1.9	2	2.1	d
Encircling Band of Punctates (C) on LN	5	11.9	4	7.5	9	9.5	e
Oblique Line of Punctates (C)			1	1.9	1	1.1	f
Encircling Band of Punctates > other			1	1.9	1	1.1	g
Total	42	100.0	53	100.0	95	100.0	

R-L=Right to Left, L-R=Left to Right, C=Circular, UN=Upper Neck, LN=Lower Neck

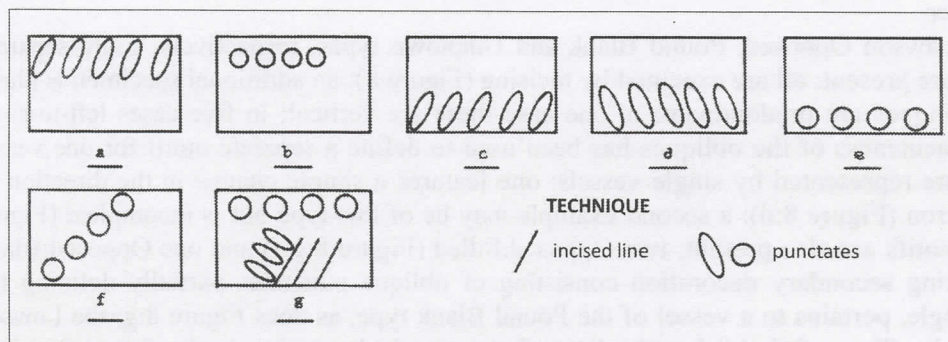


Figure 7. Late Woodland Secondary Neck Motifs

The second example from Midden 301 (Figure 3:f) has been designated "Unknown" for typological purposes in Table 2. The exterior decoration consists of a Simple motif (obliques, vertical). Most of the lower rim or neck is undecorated although a series of three obliques (left to right) are present. Decoration is executed by incising except for two

uneven punctates superimposed over part of the Simple motif. The physical characteristics include a concave-straight exterior-interior profile and a flat lip with a width of 8 mm. The interior-lip juncture is right-angled. The single collarless vessel from Midden 303 is of the Parker Festooned type (Figure 3:h). This vessel is represented by a reconstruction of six glued sherds and eight other fragments. A precise characterization of the exterior motif is not possible owing to the incomplete nature of the specimen and the complex nature of the motif, typical of this pottery type: however, it appears to feature a discontinuous encircling band of decoration immediately below the lip connected to other interconnecting oblique bands below, which are oriented at different angles and enclose irregularly shaped straight-edged undecorated areas. The lip is plain, while the interior features an encircling band of the same decoration immediately below the lip. All decoration is executed directly on the vessel (as opposed to appliqué) by a drag stamped technique. Physical characteristics of the vessel include a concave-convex exterior-interior profile and a flat lip with a width of 8 mm. The interior-lip juncture is right-angled. It may be noted that all but one of the fragments of this vessel were recovered in the excavation of three one meter squares comprising a restricted area in the southwestern part of Midden 303. The exception is the rim from the Jury collection (marked with "B4") which can only be attributed to the midden at large. This physical match represents the only physical proof that Jury was indeed on the Pond Mills site, if such were needed.

Castellations are present on 12 collared vessels. One completely reconstructed vessel rim has three castellations; two vessels have two castellations; and the remaining nine vessels are represented by single castellations. All but the first are unreconstructed and may have had more castellations originally, although the small number of castellations in general suggests that most castellated vessels had only one. In terms of form, two may be categorized as incipient rounded, one as indeterminate, and the remaining nine as incipient pointed.

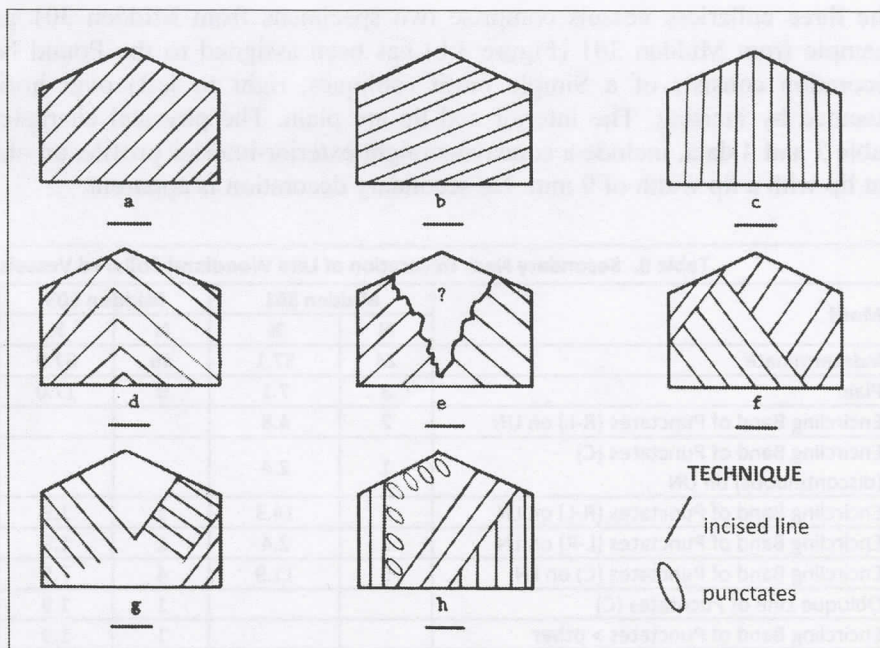


Figure 8. Late Woodland Castellation Motifs

Most of the castellated rims represent vessels of the Pound Necked type (N-9): the other three examples pertain to the Lawson Opposed, Pound Blank and Unknown types, respectively. Eight separate motifs pertaining to 11 vessels are present: all are executed by incising (Figure 8): an additional specimen is plain. Simple motifs consisting of obliques are predominant: in one case these are vertical; in five cases left-to-right (Figure 8:c, a-b). The unusual acuteness of the obliques has been used to define a separate motif for one vessel (Figure 8:b). All other motifs are represented by single vessels: one features a simple change in the direction of the obliques resulting in a chevron (Figure 8:d): a second example may be of this type but is incomplete (Figure 8:e). Three separate Opposed motifs are also present, two Opposed:Filled (Figure 8:g-f) and one Opposed:Blank (Figure 8:h). The latter, featuring secondary decoration consisting of oblique punctates partially defining the margin of the undecorated triangle, pertains to a vessel of the Pound Blank type, as does Figure 8:g; the Lawson Opposed vessel is represented by Figure 8:f. All but the latter feature neck decoration in the form of incised horizontal lines. Seven have an indeterminate number of horizontal lines on the neck and single examples are represented by two, four, five and seven horizontal lines on the upper neck above secondary neck decoration consisting of a line of encircling punctates above plain lower neck. Interior decoration is present on five castellated vessels. In all but one case this consists of an encircling line of circular punctates (Figure 4:f): the exception features an encircling line of diamond-shaped punctates (Figure 4:j).

The total sample of 12 castellated vessels is equally divided between middens 301 and 303. With reference to their illustration, the occurrence and incidence of motifs are as follows: Midden 301, Figures 8:a (N-2), b (N-1), e (N-1), g (N-1), h (N-1); Midden 303, Figure 8:a (N-2), c(N-1), d (N-1), f (N-1), and plain (N-1).

Fragmentary Rim Sherds

A total of 343 Iroquoian rims from 1983 are categorized as fragmentary on the basis of previously-defined criteria. These were subjected to a cursory examination following cataloguing in order to assure that pre-Iroquoian ceramics were not included. Except for three specimens, which were matched to the analysed vessels (see above), the fragmentary rims have not been analysed.

Neck-Shoulder Sherds

The 1983 sample includes 429 neck and/or shoulder fragments. As above, all have been subjected to a cursory examination and are attributed to the Late Woodland component. Similarly, these have not been analysed, excepting three specimens that were matched to the analyzed vessels.

Body Sherds

A relatively large number of body sherds were recovered which are attributed to the Late Woodland component. The sample of 2,217 specimens was examined for surface treatment. The majority of specimens (N-1746, 78.8%) are plain. The second most common surface treatment is self-slipped (N-347, 15.7%); followed by smoothed-over ribbed paddled (N-100, 4.5%). The remaining categories, scarified (N=4), decorated (N=3), and a combination of smoothed-over ribbed paddled over self-slipped (N=2), are barely represented. Two of the three decorated body sherds have parallel incised lines, the third incised lines of an indeterminate motif. In terms of body surface treatment the discrete samples from Middens 301 and 303 are comparable, although the former has a higher incidence of smoothed-over ribbed paddled sherds, 76 sherds as compared to 20 sherds recovered from Midden 303.

Fragmentary Sherds: Leaf Impression

A total of 17,259 grams of fragmentary sherds are attributed to the Middleport component on the basis of provenience and a superficial examination of paste and temper. Although these have not been analysed, one particular fragment deserves discussion. This specimen, from the neck portion of a vessel, bears the partial impression of a deciduous leaf (Figure 9). To the best of the writer's knowledge this is the first leaf impression reported from an archaeological site in Ontario. The impression was kindly examined by Professor J. Phipps, Chairman of the Department of Plant Sciences, The University of Western Ontario. On the basis of the lobe size and shape relative to the secondary vein length and of the number and spacing of secondary veins and their divergence angle to the midrib, Professor Phipps was able to narrow down the identification to a few genera. The four possibilities he identifies are *Hamamelis* (witch-hazel), *Alnus* (alder), *Corylus* (hazel), and *Crataegus* (hawthorn). Of these, *Hamamelis* is the most probable (J. Phipps, letter of January 19, 1984). One other alternative identification in addition to the above is *Platanus* (Sycamore) (D.A. Metsger, Curatorial Assistant, Botany Department, Royal Ontario Museum, letter of July 17, 1984).

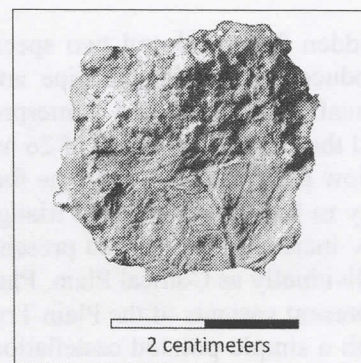


Figure 9. Leaf Impressed Sherd

Juvenile Vessel Fragments

Fragments attributed to juvenile vessels comprise 616 specimens. These have not been analysed. A nearly complete, very simple example is illustrated in Figure 10:a.

Ceramic Pipes

Ceramic pipes are represented by a total of 51 specimens. Types are described with reference to Emerson (1967) although some of the pipes described here differ from his types in their absence of decoration. Table 10 summarizes the nature, incidence and distribution of the sample.

Midden 301 produced well over half the specimens recovered. The one complete bowl is a variant of the Iroquois Ring type: it features two parallel incised line encircling the front part of the lower bowl (Figure 10:b). A second

bowl is a variant of the Conical Decorated type: it features single encircling incised lines at the top and bottom and a vertical incised motif which surrounds the bowl and continues onto the elbow (Figure 10:c). Six bowl fragments are trumpet-shaped: five of these are complete enough to assign to the Plain Trumpet type (Figure 10:d). One crude bowl fragment represents a juvenile pipe and lacks a stem hole at the elbow. The remaining 13 bowl fragments, three with lips and 10 without, are too fragmentary to type.

Nature	Midden	Midden	Midden	Total
	301	302	303	
Complete Pipe			1	1
Complete Bowl	1			1
Bowl Fragment (lip)	11		7	18
Bowl Fragment (no lip)	10	1	3	14
Elbow Fragment		1		1
Stem	1			1
Stem Fragment (mouthpiece)	8		1	9
Stem Fragment (no mouthpiece)	4		3	7
Total	35	2	14	51

The 13 stem fragments from Midden 301 include one complete stem from a small juvenile pipe (Figure 10:e). This specimen is crude and has a total length of 26mm. A fragment with mouthpiece is also crude and is similarly attributed to a small juvenile pipe. Seven other stem fragments include mouthpieces: all are tapered to a slightly flattened lip (Figure 10:f). One of these specimens is somewhat crude and has been before firing, partly whittled or scraped along its length to achieve roundness. Another of these specimens is unusually long: the incomplete stem length of this piece is 103mm. The remaining three pieces from Midden 301 are stem fragments lacking mouth-pieces.

Midden 302 produced two specimens: a bowl fragment lacking the lip; and an elbow fragment. Midden 303 produced one complete pipe and thirteen fragments. The complete specimen is somewhat crude, short, and casually decorated, and is interpreted as juvenile (Figure 10:g). The bowl and stem meet at a slightly obtuse angle and the stem has a length of 26 mm. Decoration consists of shallow incising in the form of a single encircling line below a notched lip. This line forms the base for a series of small inverted triangles around half the bowl, giving way to two larger inverted triangles, one on one side of the bowl, the other on the portion facing the smoker. A few incised lines are also present on the lower bowl. Six other bowl fragments retain lips. Three may be typed individually as Conical Plain, Plain Apple Bowl and Plain Vasiform (Figure 10:h-j), respectively. Two others may represent variants of the Plain Trumpet type. Both of these are outflaring. One features an everted flattened lip and with a simple pointed castellation (Figure 10:k); the other has a horizontally-oriented flattened lip (Figure 10:l). An additional bowl fragment with lip is of indeterminate type, as are three others lacking lips.

The most unusual pipe from the Pond Mills site is represented by a bowl and elbow fragment. This specimen appears to have had an obtuse stem-to-bowl angle and is highly decorated (Figure 10:m). The upper bowl is missing and the observable decoration consists of a single encircling (?) incised line above deep punctates above longitudinally-oriented lines of shallow, smaller punctates, with a large impressed arrow on the one observable side of the bowl-stem juncture. What remains of the stem is constricted and features an encircling line of punctates. The remaining four pipe fragments from Midden 303 are portions of stems. One retains a mouthpiece, and is considered juvenile on the basis of crudeness.

Miscellaneous Ceramic Objects

Two fragmentary specimens could not be assigned to any identifiable ceramic category with any degree of confidence. One may represent a juvenile castellation: it features a punctated decoration. The other is a segment of what may be a plano-convex disk or lump of clay. Both are fired and tempered.

Lumps of Clay

Lumps of clay pertaining to ceramic manufacture are represented by 769 pieces with a total weight of 1572 grams. Examples are present in all three middens. The combined sample comprises 346 tempered specimens and 423

untempered pieces: all are fired. Similar proportions of tempered and untempered pieces are represented in Midden 301 (253 and 301 pieces, respectively) and Midden 303 (93 pieces and 118 pieces, respectively): the only specimens representing Midden 302 are untempered. Finger prints are present on nine pieces, five from Midden 301 and four from Midden 303. Small individual pieces of chert debitage burnt during the firing process are included in one piece from Midden 301 and two from Midden 303. An additional piece from Midden 303 even includes a small bone fragment. These inclusions are more likely accidental than deliberate, and are interpreted as evidence of manufacture in what was perhaps a dirtier-than-normal environment for an Iroquoian site: in the writer's experience these inclusions are unique.

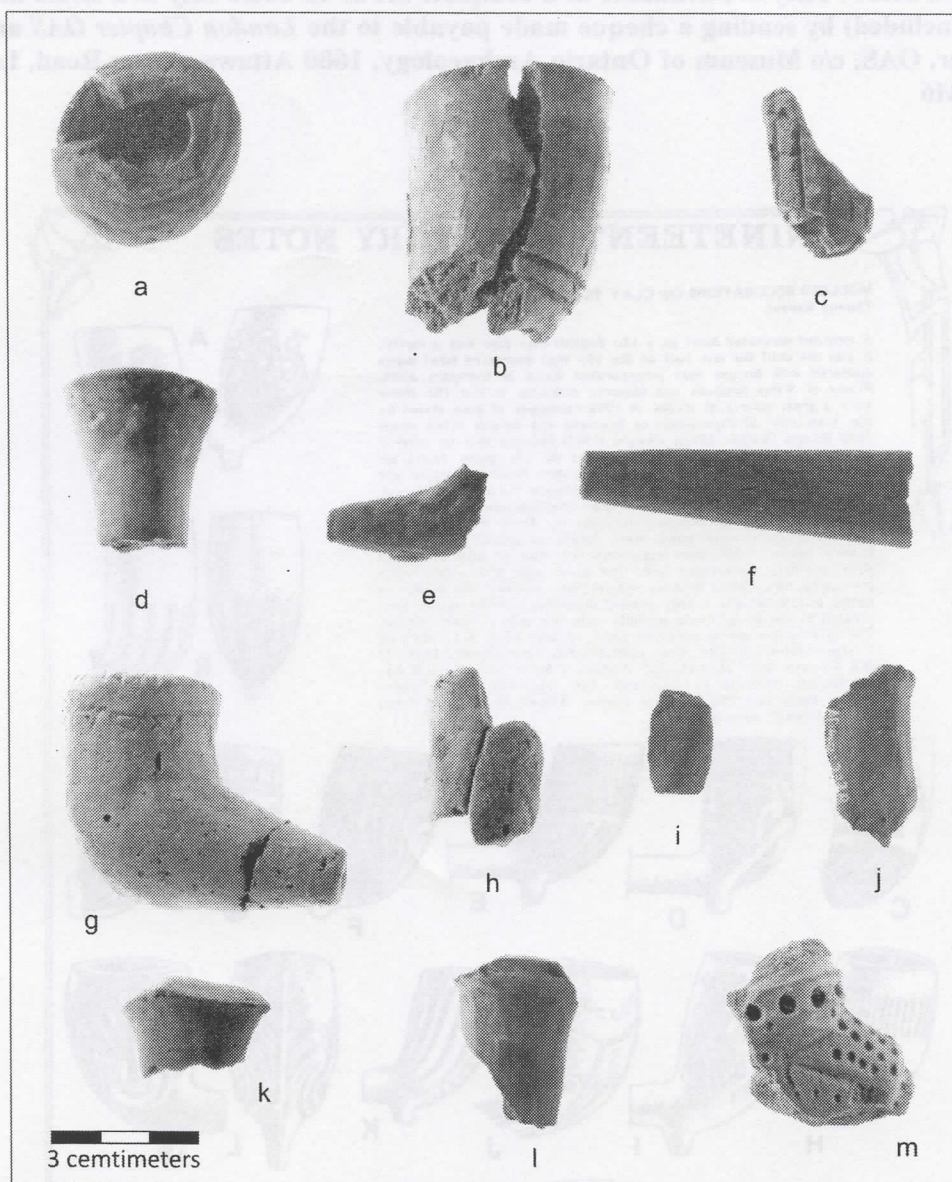


Figure 10. Miscellaneous Ceramics and Pipe Fragments

This concludes the first instalment of the Pond Mills site portion of the C.O.E.D. report. The description of the balance of the cultural remains and the interpretation of the site will follow in future issues, together with summary and conclusions of the overall project.

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